

CLAIMS

What is claimed is:

1 1. A method for mixed-mode execution, comprising of a higher-level mode
2 of execution and a lower-level mode of execution, in object-oriented programs, where
3 said higher-level mode of execution has components that are executed by said lower-level
4 mode of execution and where it is possible to add new objects to a running program at
5 said lower-level mode of execution, said method comprising of techniques for:

6 accessing/updating memory located in said lower-level mode of execution
7 by code in said higher-level mode of execution;

8 transferring control from said lower-level mode of execution to said
9 higher-level mode of execution; and

10 transferring control from said higher-level mode of execution to said
11 lower-level mode of execution.

1 2. A method according to claim 1 wherein said new objects are
2 specializations of existing objects with the ability to interact with said higher-level mode
3 of execution through bridge methods in said lower-level mode of execution.

1 3. A method according to claim 1 wherein said bridge methods have the
2 ability to access or modify said memory.

1 4. A method according to claim 1 wherein said bridge methods call methods
2 in said higher-level mode of execution.

1 5. A method according to claim 1 wherein said bridge methods call
2 constructors in said higher-level mode of execution.

1 6. A method according to claim 1 wherein compilation of said lower-level
2 mode of execution allows said lower-level mode of execution to invoke said bridge
3 methods at predetermined locations.

1 7. A method according to claim 1 wherein control is transferred from said
2 higher-level mode of execution to said lower-level mode of execution at method
3 boundaries.

1 8. A method according to claim 1 wherein control is transferred from said
2 higher-level mode of execution to said lower-level mode of execution within said
3 methods.

1 9. A method according to claim 8 to transfer local state of said methods
2 during said transfer of control from said higher-level mode of execution to said lower-
3 level mode of execution within said methods.

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